



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: BR700-715B1-30      BYPASS RATIO: 4.6  
 UNIQUE ID NUMBER: 4BR003      PRESSURE RATIO ( $\pi_{00}$ ): 30.5  
 COMBUSTOR:  
 ENGINE TYPE: MTF      RATED THRUST ( $F_{00}$ ) (kN): 89.7

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	0.5	36.9	59.2	4.6
AS % OF ORIGINAL LIMIT	2.3	31.3	58.7	18.9
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			73.3	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			87.2	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			98.9	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			115.9	

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 x OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	0.905	0.00	0.78	27.21	3.6
CLIMB OUT	85	2.2	0.743	0.01	0.76	20.34	2.9
APPROACH	30	4.0	0.259	0.00	3.38	11.38	1.0
IDLE	7	26.0	0.098	0.17	15.56	5.54	0.9
LTO TOTAL FUEL (kg) or EMISSIONS (g)			351	27	2693	4583	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				0.3	30.1	51.1	3.6
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				0.24-0.37	29.44-31.21	50.79-51.54	3.24-3.8

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	101.3-101.9
TEMPERATURE (K)	288.8-294.4
ABS HUMIDITY (kg/kg)	0.0066-0.0079

### FUEL

SPEC	AVTUR
H/C	1.89
AROM (%)	17.7

MANUFACTURER: Rolls-Royce Deutschland  
 TEST ORGANIZATION: BMW Rolls-Royce GmbH  
 TEST LOCATION: Dahlewitz  
 TEST DATES: 07/05/1998-08/05/1998

### REMARKS

1. Data from Certification Report E-TR484/98 (FR) ISS00

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)